EPA Comments on the March 15, 2007 "Troy Asbestos Property Evaluation Work Plan (Field Sampling Plan and Quality Assurance Project Plan)"
And
DEQ'S Response/Actions to Comments

LBAS-047
38-DC-08-03-05

TAPE

General Comments:

The March 15, 2007 version of the TAPE Work Plan is missing the following important details that, in our view, are fundamental to successful implementation of the field program. We recommend that field work not begin until the final TAPE Work Plan, which includes the following details, has been developed and approved.

DEQ Response: Pursuant to e-mail dated April 17, 2007 from Paul Peronard, DEQ will continue to prepare for our field team training and subsequent field work without a final and approved TAPE Work Plan.

A. The data quality objectives (DQOs) for the TAPE are inadequate. Since EPA is the primary data user (data will support the baseline risk assessment and response action decisions), we believe we have a responsibility to provide assistance in developing the DQOs. Therefore, we've included suggested revised DQOs as an attachment to these comments.

DEQ Response: DEQ will direct Tetra Tech to revise the DQO table with EPA-provided language when EPA provides the final language.

B. The TAPE Work Plan doesn't specify the required analytical sensitivities or laboratory analytical methods to be used for sample analyses. In addition, although the laboratories tasked with performing the analyses are generally referred to, they aren't specifically identified. Without this information, field team members responsible for shipment of samples to the laboratories may be unable to perform these tasks correctly or, at a minimum, there may be confusion. Please include this information in the final TAPE Work Plan. The analytical method for dust samples should be specified as ASTM D5755 (most recent version) as modified by project-specific permanent laboratory modifications. The analytical method for soil samples should be specified as SRC-Libby-03 (PLM-VE) (most recent version). The required analytical method for air samples needs to be specified also. The soil preparation method should also be cited in the final TAPE Work Plan; the SOP is EPA-Libby-01(most recent version).

DEQ Response: The Tetra Tech field team members are not responsible for sample shipment or laboratory analytical methods. Per our conversation on April 19, 2007, DEQ will direct Tetra Tech to eliminate Appendix G and all references thereto and replace with concise discussion of and reference to the draft Sitewide Quality Assurance Project Plan (QAPP). DEQ will ask EPA to provide a copy of the most recent version of the Sitewide QAPP for appropriate inclusion and reference. DEQ will direct Tetra Tech to insert specific language provided by EPA relating to analytical methods and sensitivities for inclusion in Step 7 of the DQO section of the TAPE. DEQ will also direct Tetra Tech to include a

discussion of laboratory analytical methods and sensitivities for air samples in the Health and Safety Plan. It was decided that all air sampling discussion will remain in the Health and Safety Plan and remain separate from the main body of the Work Plan.

C. The laboratory quality assurance/quality control (QA/QC) procedures currently specified in the TAPE Work Plan are too limited to be useful and informative. A possible solution to correct this is to provide a reference in the final TAPE Work Plan to the Sitewide Quality Assurance Project Plan (QAPP) for laboratory QA/QC procedures and to clarify the roles and responsibilities for implementing the QA/QC procedures.

DEQ Response: Per our conversation on April 19, 2007, DEQ will direct Tetra Tech to eliminate Appendix G and all references thereto and replace with concise discussion of and reference to the draft Sitewide Quality Assurance Project Plan. DEQ will ask EPA to provide a copy of the most recent version for appropriate inclusion and reference.

D. Although a general description of the dust sampling procedures is provided, key details of the dust sampling are missing from the TAPE Work Plan. In our specific comments below, we've identified some of the information that needs to be included but we suggest that EPA, DEQ, and the appropriate technical support contractors discuss the dust sampling effort before the final TAPE Work Plan is produced. The final TAPE Work Plan Appendix B must include clear written guidance on how to collect these samples.

DEQ Response: DEQ will direct Tetra Tech to prepare an Indoor Inspection and Dust Sample Collection guidance to be included in Appendix B, incorporating both comments below and our discussions. DEQ will also direct Tetra Tech to limit the details in the main text of the Work Plan to summarize and reference the guidance in Appendix B. DEQ will direct Tetra Tech to provide EPA a draft version of the guidance no later than April 18, 2007 for EPA review and comment on April 19, 2007. Per our discussion on April 19, 2007, EPA will provide DEQ a copy of the latest version of the work plan for the "pilot" dust sample collection project prepared by CDM for a clear example of the details necessary in the guidance of Appendix B.

E. Data validation should be performed by personnel with experience in performing this work on the Libby Asbestos Site. The TAPE Work Plan is unclear on who will be performing this task. Not only is this an important aspect of ensuring that the data produced are of known quality, it's a task that will require project resources and planning. A data verification SOP for TEM analysis, prepared by Syracuse Research Corporation (SRC), exists and should be referenced in the TAPE Work Plan and included in Appendix B along with the other SOPs and guidance documents.

DEQ Response: EPA will provide DEQ the SRC Data Verification SOP for reference in Section 7.2 and inclusion in Appendix B. DEQ will direct

Tetra Tech to clearly identify Chris Reynolds in Section 7.2 as the individual from Tetra Tech to perform data validation in accordance with the SRC Data Verification SOP.

F. The field and laboratory quality assurance requirements are incomplete. In our specific comments on Sections 5.0 and 7.0 (below) we've identified key missing information. It unclear how the results of the field quality assurance samples will be communicated back to the field team to allow adequate monitoring of the sampling. Please include this in the final TAPE Work Plan. The responsibilities for performing key quality assurance tasks are vaguely described. The final TAPE Work Plan should describe this clearly.

DEQ Response: DEQ will direct Tetra Tech to describe the detailed communication of the results from the field QA samples to the field team in Section 5.2.

Specific Comments

1. Section 1.2, Conceptual Site Model

a. Page 4: Please modify the first sentence of this section to reflect that we are collecting data to investigate the likelihood of adverse effects due to inhalation of airborne asbestos fibers that are likely to occur in Troy. A suggested modification is: *"Exposure to airborne asbestos through inhalation is the main exposure route of concern which has the potential to result in malignant and non-malignant respiratory diseases."*

DEQ Response: DEQ will direct Tetra Tech to amend the first sentence as noted.

b. Page 4: Please clarify that the conceptual site model presented in Figure 1-1 presents inhalation exposure pathways only. This should be reflected in the text on page 4 and also in the title of Figure 1-1. As currently presented in the TAPE work plan, Figure 1-1 is missing an identification of the exposure route. It includes sources, release mechanisms, transport pathways, contaminated media, and receptors, but does not indicate the exposure route(s).

DEQ Response: DEQ will direct Tetra Tech to amend the CSM to include a "column" for Exposure Route of Inhalation and revise the title to read: "Conceptual Site Model – Potential Human Inhalation Exposure Pathways to Asbestos." The text on page 4 identifies the CSM as representing inhalation pathways only.

c. Page 5, Figure 1-1: Please include inhalation of outdoor ambient air as an additional exposure pathway in Figure 1-1.

DEQ Response: DEQ will direct Tetra Tech to amend Figure 1-1 to replace the box "Inhalation by Troy Residents While Visiting or Working in Libby" to read "Inhalation of Outdoor Ambient Air" and un-bold and un-shade the box and associated lines.

d. Page 6: There is a statement in the first paragraph that outdoor ambient air will be investigated under the TAPE work plan. This isn't accurate. The only air samples in the scope of the TAPE work plan are related to ensuring worker protection and are mentioned in the health and safety plan. These samples aren't designed to satisfy the objectives for characterizing outdoor ambient air. Please modify the sentence accordingly.

DEQ Response: DEQ will direct Tetra Tech to revise the first full sentence on page 6 to read: "...unenclosed sources, air near breached walls, indoor air, and air near disturbed soil."

e. Page 7, Figure 1-2: The figure is unclear. Please provide a figure at a scale that depicts the boundaries of the operable unit (OU) clearly as well as labeled main streets and highways, and other features that define the OU. Indicate the significance of the red line. Also, please provide a better rationale for the choice of the study area boundaries. Were they chosen to include all properties within the town of Troy? The text indicates the boundaries were chosen based on population density. What density was chosen? Why? Please explain.

DEQ Response: DEQ will direct Tetra Tech to revise the figure, possibly to print on larger paper, identify the main roads within the OU, and clearly identify the purpose of the red line. DEQ will direct Tetra Tech to revise the last sentence in Section 1.3 to read: "The Troy OU7 boundary was selected to ensure that investigations captured most of the older homes in and around Troy that are mostly likely to be contaminated. Based upon unique conditions of certain properties outside the OU boundary, DEQ and EPA may consider addressing them on a case-by-case basis or expanding the OU boundary. For instance, if the contamination is clearly related to the vermiculite mine (such as buildings transported from the mine or obvious vermiculite processing waste), DEQ and EPA may investigate and/or cleanup that property. Property owners are encouraged to contact the DEQ Troy Information Center to discuss certain properties outside the OU boundary."

2. Section 2.0, Project Organization

a. Page 8: The description of responsibilities is incomplete and in some instances is incorrect. At the beginning of this section, the responsibilities of EPA and DEQ should be clearly described. We suggest beginning this section with the following language or something similar:

"EPA and DEQ have agreed that DEQ is the lead agency responsible for performing the field work in support of the TAPE project. This work is funded by EPA through a cooperative agreement between EPA and DEQ. Specifically, DEQ is responsible for performing community relations activities, obtaining access to properties, scheduling property inspections, performing the property inspections described in this work plan, collecting all field samples described in this work plan including those samples required by the Health and Safety Plan, performing sample labeling, handling, and tracking, and entering field data into an EPA-maintained database. DEQ, through its contractor Tetra

Tech EM Inc., is responsible for delivering field samples under chain of custody to EPA for sample preparation and analysis. The exception to this is that Tetra Tech EM Inc. will ship air and dust samples collected pursuant to the Health and Safety Plan under chain of custody directly to the appropriate laboratories for analysis.

EPA is responsible for sample preparation and analysis of all samples collected under the TAPE Work Plan and management of the database. EPA's Environmental Services Assistance Team (ESAT), staffed by the EPA contractor Techlaw, Inc., is responsible for preparing soil samples for analysis in accordance with the soil preparation work plan, Appendix F to the TAPE Work Plan. The ESAT will receive both soil and dust field samples under chain of custody from Tetra Tech EM Inc., prepare soil samples for analysis, enter soil sample preparation data into an EPA-maintained database, and ship both soil and dust samples under chain of custody to the appropriate laboratories for analysis.

Through an Interagency Agreement with EPA, the Department of Transportation's John A. Volpe National Transportation Systems Center (Volpe Center) has contracted with Camp Dresser & McKee (CDM) to perform laboratory analysis of all samples collected under the TAPE work plan. The Volpe Center is also responsible for management of the project database."

Section 2.0 is incorrect in stating that ESAT and Tetra Tech EM Inc. will oversee laboratory schedules. Since the laboratories are under contract to CDM, only CDM has direct oversight of the laboratory schedules. The EPA project officer for the IAG between EPA and the Volpe Center may direct the Volpe Center who may then direct CDM. However, neither ESAT nor Tetra Tech EM Inc. may direct the Volpe Center or CDM. Please correct this.

DEQ Response: DEQ will direct Tetra Tech to revise the two paragraphs under Section 2.0 to read:

> *"Table 2-1 presents the responsibilities and contact information for key personnel involved in the TAPE inspection and sampling project. In some cases, more than one responsibility has been assigned to a person. Figure 2-1 presents an organizational chart to graphically represent the relationships between the different Agencies, Contractors, and other parties involved with the TAPE project.*
>
> *EPA and DEQ have agreed that DEQ is the lead agency responsible for performing the field work in support of the TAPE project. This work is funded by EPA through a cooperative agreement between EPA and DEQ. Specifically, DEQ is responsible for performing community relations activities, obtaining access to properties, scheduling property inspections, performing the property inspections described in this work plan, collecting all field samples described in this work plan including those samples required by the Health and Safety Plan, performing sample labeling, handling, and tracking, and entering field data into an EPA-maintained*

database. DEQ, through its contractor Tetra Tech EM Inc., is responsible for delivering field samples under chain of custody to EPA for sample preparation and analysis. The exception to this is that Tetra Tech EM Inc. will provide for air and dust samples collected pursuant to the Health and Safety Plan, dust lot blank samples (see Section 5.2), and initial dust samples from field teams to verify appropriate collection methods (see Section 5.2) to be relinquished under chain of custody to CDM for analysis at the appropriate laboratories for rapid turn-around analysis.

EPA is responsible for sample preparation and analysis of all samples collected under the TAPE Work Plan and management of the database. EPA's Environmental Services Assistance Team (ESAT), staffed by the EPA contractor Techlaw, Inc., is responsible for preparing soil samples for analysis in accordance with the soil preparation work plan, Appendix F to the TAPE Work Plan. The ESAT will receive both soil and dust field samples under chain of custody from Tetra Tech EM Inc., prepare soil samples for analysis, enter soil sample preparation data into an EPA-maintained database, and ship both soil and dust samples under chain of custody to the appropriate laboratories, as directed by CDM, for analysis.

Through an Interagency Agreement with EPA, the Department of Transportation's John A. Volpe National Transportation Systems Center (Volpe Center) has contracted with Camp Dresser & McKee (CDM) to perform laboratory analysis of all samples collected under the TAPE work plan. The Volpe Center is also responsible for management of the project database."

b. Page 8: The second paragraph in Section 2.0 mentions "initial dust samples". Please clarify what these samples are.

DEQ Response: DEQ has provided the following text in the above revision as further explanation: "initial dust samples from field teams to verify appropriate collection methods." DEQ will direct Tetra Tech to also revise Section 5.2 to include similar language for further explanation of these "initial" dust samples.

If these are the dust samples from rental vehicles described in section 8.1 of the Health and Safety Plan, there is a requirement for collection of these samples monthly during the project and prior to returning the rental vehicles. Please explain how these additional samples will be tracked and shipped for analysis.

DEQ Response: The "initial" dust samples are not the vehicle samples. The above revised text identifies how all samples collected under the Health and Safety Plan will be managed.

c. Page 8: What is meant by "ESAT will then be responsible for custody and quality assurance of the samples until delivery to a contract laboratory..."? Quality assurance is provided by a prescribed program detailed in a QAPP. Please modify or explain.

DEQ Response: The revised text above eliminates the statement in question.

d. The project organization section must include an organizational chart in addition to Table 2-1 that accurately reflects the roles and relationships between the various parties with responsibilities for implementing the TAPE work plan. In the organizational chart, please identify a sample coordinator for Tetra Tech EM Inc, ESAT, and CDM; identify who has direct oversight of all the various contractors; the project managers for the Volpe Center and CDM as well as their specific responsibilities under the TAPE work plan; the database manager provided by the Volpe Center; and the person or group responsible for data validation.

DEQ Response: DEQ will direct Tetra Tech to prepare an organizational chart identifying those entities and persons specifically associated with the TAPE Work Plan. The chart will not include general duties for the overall Libby Asbestos Superfund Site. Tetra Tech will prepare the chart in consultation with Paul Peronard for the identification of the appropriate individuals.

e. Pages 9-11: The following corrections need to be made to Table 2-1, Key Personnel:

- The Tetra Tech EM, Inc. TAPE QA/QC Manager conducts internal field audits on behalf of Tetra Tech, EM, Inc.
- Please add that the Tetra Tech EM, Inc. TAPE QA/QC Manager is responsible for conducting training of personnel and providing oversight of personnel scheduling.
- Please identify the person responsible for overall management of the database. If database management responsibilities are shared among several agencies and contractors, please identify the specific responsibilities of each and a point of contact for each.
- The table identifies a Tetra Tech Field Data Coordinator who has responsibility for reviewing data before release to the project team. Please explain the type of review. An independent data validation is required. Please clearly indicate that who is responsible for the independent data validation.
- The information provided for Mr. McComb of EPA is incorrect. His organization is EPA; his role is the project officer for the ESAT contract. His responsibilities are to manage the ESAT work assignment to ensure preparation of all soil samples and proper storage of soil and dust samples until transfer under chain of custody to laboratories. Mr. McComb is not responsible for tracking laboratory schedules and deliverables as the laboratories are under contract to CDM.
- Please delete EPA Remedial Project Manager and replace with EPA Team Leader, Paul Peronard. Mr. Peronard's responsibilities include overall project coordination, oversight of budget and schedule, approval of all work plans, and modifications, project officer for the IAG between EPA and the Volpe Center, coordination with DEQ, and consultation with EPA technical support personnel.
- Please indicate who is responsible for independent field audits. *(EPA is responsible)*

DEQ Response: DEQ will direct Tetra Tech to modify Table 2-1 according to the above comments and our conversation on April 17, 2007.

3. Section 2.2, Non-Agency Observation of Field Activities

a. Page 11: Please modify the first few sentences in Section 2.2 to:

"As the final data user and the agency providing funding as well as the sample coordination, preparation, and analytical services for the TAPE, EPA will be allowed any opportunity necessary to observe the TAPE project activities. EPA will coordinate observation of TAPE project activities with the DEQ Project Officer. Requests for non-EPA observation ..... (Continue as currently written)".

DEQ Response: DEQ will direct Tetra Tech to revise the title of Section 2.1 to read: "Agency Oversight" and the text to read: "The DEQ Project Officer (or designee) will provide oversight of all field activities associated with this TAPE project. DEQ and EPA oversight personnel will have the ability to inspect all field and sampling activities, determine the appropriateness of the recorded data, and ensure that all activities comply with standard practices that meet the project objectives. Before any oversight is conducted, the Tetra Tech on-site health and safety coordinator will brief the DEQ and EPA oversight personnel to ensure safe practices are maintained throughout the TAPE field effort." DEQ will direct Tetra Tech to eliminate the first sentence of Section 2.2.

b. Page 12: Section 2.2 mentions that no sample results will be available during the TAPE inspection and sampling. When will the results be available? What agency is responsible for providing the results, once available, to the property owners? Please include this in the TAPE Work Plan so that, at a minimum, we can all plan for this activity.

DEQ Response: DEQ does not know when sample results will be available. Thus far, EPA has indicated sample analysis depends on resources of laboratory time, personnel, work load, and most importantly funding. DEQ will provide the results to the property owner when available and appropriate. However, at this time, DEQ cannot provide specific language as to how and when this may happen. The dissemination of results directly depends on the availability of the results (all at once, trickle in from the labs, etc.?) and subsequent clean up decisions based on those results. DEQ will not provide sample results to the residents without the ability to clearly explain the results and how those results impact clean up decisions for each property. Therefore, DEQ did not include such details in the TAPE. Until EPA provides DEQ specific schedules, DEQ will not commit to the process of dissemination of sample results.

4. Section 2.3, Special Training and Certificates

a. Page 12: The second paragraph of this section states that at least one member of every Tetra Tech field team will maintain current certification in the American Red Cross "Multimedia First Aid" and CPR Modular or equivalent. Please clarify that this requirement applies to every two-person field inspection team.

DEQ Response: DEQ will direct Tetra Tech to revise the text of the second paragraph to read: "At least one member of every Tetra Tech two-person field inspection team will maintain...."

b. Page 13: At the end of this section, there is a bulleted list of site-specific training requirements for Tetra Tech personnel. Please add that Tetra Tech personnel are also required to attend mandatory site-specific training on the field procedures before performing inspections and collecting samples at properties. A site-specific training practical will be held in April.

DEQ Response: DEQ will direct Tetra Tech to revise the sentence immediately preceding the bullet list to read: "Before field work begins for the TAPE Work Plan, Tetra Tech personnel are required to undergo site-specific training...."

5. Section 3.0, Troy Data Quality Objectives

Please replace Table 3-1 in its entirety with the attached new text.

DEQ Response: DEQ will direct Tetra Tech to replace Table 3-1 with complete text provided by EPA.

6. Section 4.0, Field Procedures

a. Key written procedures are missing from the Standard Operating Procedures (SOP) and Guidance provided in Appendix B. The following written procedures are missing from the current version of the TAPE Work Plan and must be included in the final version (Appendix B):

- Indoor Inspection Procedures
- Indoor Dust Sampling Procedures
- Air Sampling Procedures
- Sample Labeling, Tracking and Handling Procedures
- Installation of Temporary Barriers

DEQ Response: DEQ will direct Tetra Tech to modify the text of the main body of the Work Plan to create and reference separate guidance for inclusion in Appendix B. DEQ will also direct Tetra Tech to limit the details in the main text of the Work Plan to summarize and reference the guidance in Appendix B. Per our conversation of April 17, 2007, Tetra Tech will prepare guidance for Appendix B titled "Indoor Inspection and Dust Sampling Guidance" and "Sample Tracking and Handling Guidance." The existing "Soil Sampling and Visual Estimation of Vermiculite Guidance" and the new "Indoor Inspection and Dust Sampling Guidance" will include Sample Labeling procedures for each media. DEQ will direct Tetra Tech to create "Air Sampling Guidance" as an attachment to the Health and Safety Plan. Given the variety of temporary barriers possible, Tetra Tech will not prepare guidance for the installation of temporary barriers.

b. Please delete the SOPs developed by CDM for OU4: Completion of Field Sampling Data Sheets (CDM-Libby-03); Completion of Inspection Field Forms (CDM-Libby-04);

and Site-Specific Standard Operating Procedure for Soil Sample Collection (CDM-Libby-05). The procedures described in the above CDM SOPs are inconsistent in some respects with the description of the field procedures in Section 4.0 and they contain terminology that is inconsistent with that used in the TAPE Work Plan. Including these in the TAPE Work Plan is very confusing. We strongly recommend developing guidance specifically for the TAPE and including it in Appendix B.

DEQ Response: DEQ will direct Tetra Tech to eliminate the CDM SOPs from both the text and Appendix B.

c. We recommend that the TAPE Soil Sampling and Visual Estimation of Vermiculite Guidance, Version 01 be separated into two individual guidances, one for the composite soil sampling procedures, and one for the visible vermiculite identification procedure to be performed for screening of nature and extent of visible vermiculite contamination.

DEQ Response: Per our conversation of April 17, 2007, DEQ will not direct Tetra Tech to separate the guidance. Tetra Tech will prepare a single guidance for each separate field activity. Therefore, soil sampling and visual estimation are one guidance and indoor inspection and dust sampling are also one guidance.

d. We strongly recommend that all field forms and PDA screens specific to each field procedure be included in the written SOP or guidance for that procedure so that field teams only need to refer to one place in the work plan for all information related to each field procedure.

DEQ Response: DEQ will direct Tetra Tech to allow for the inclusion of field forms and PDA screens in each guidance. However, the field forms and PDA screens will not be provided in the guidance until a final Work Plan is approved. DEQ will have appropriate field forms and PDAs available for training week knowing those may change quickly after field work begins.

7. Section 4.4, Building Inspection, Sample Collection, and Recording Procedures

a. We recommend that each field team have a reference sample of VCI and vermiculite to ensure accurate identification of these materials during the indoor inspections. Please include this in the written guidance.

DEQ Response: CDM has committed to providing DEQ such reference samples for our training week and to keep in the DEQ Troy Information Center. DEQ will direct Tetra Tech to revise the first paragraph of Section 4.4.1 to read: "The two-person field team will visually inspect each building for the presence of VCI and other visible vermiculite. Each field team will have reference samples of VCI and other forms of vermiculite to aide in identification of the material. One team...."

b. Page 30: The first sentence in the description of the indoor inspection indicates that the two-person field team will inspect each building for the presence of Libby amphibole contamination. Please replace "Libby amphibole" with "VCI and visible vermiculite" since Libby amphibole is not visible in most instances. In stead, we are looking for material that is known to contain Libby amphibole. Please make this correction as necessary throughout the text.

DEQ Response: Please see response and revision to above comment. DEQ will direct Tetra Tech to make this change as appropriate throughout the entire document and appendices.

c. Pages 30-32: The procedures described in the indoor inspection section indicate that the following information will be collected by the field team during the indoor inspection. However, the TAPE Work Plan doesn't indicate where the information will be recorded. For each of the following items, if the information is intended to be recorded in the PDA, please indicate so in the written procedure and ensure the PDA is programmed accordingly. If the information is intended to be recorded in the field log book, please indicate so in the written procedures.

- Level of finishing in the attic area (unfinished, partially finished, fully finished) *(PDA)*
- Results of inspection of wall interiors by removing a representative sample of electrical switch plates; locations of the switch plates that were removed *(delete this activity from work plan)*
- Results of inspection of ductwork in accessible unfinished areas of the building *(add to PDA if ductwork goes from attic to living spaces)*
- Notes on whether utility conduits run from the attic to the living space *(delete this activity from work plan)*
- The presence of trusses or bracing posts in the attic that may pose an obstacle to potential cleanup (work plan indicates this will be described in the "inspection form" – is this the PDA?) *(delete this activity from work plan)*
- The presence of vermiculite-containing potting soil in indoor planters *(logbook)*
- Details of any temporary barriers installed by the field teams *(logbook)*

DEQ Response: See individual resolution for each bullet item above.

d. Please ensure the PDA is programmed to allow the following information from the indoor inspection to be recorded as indicated in this section. Or, if it is not intended to be recorded in the PDA, please modify the section accordingly:

- Field measurements of VCI (length, width, height) *(delete this activity from the work plan)*
- Barriers between attic area and access points *(delete this activity from the work plan)*
- Observations of damaged or friable suspect asbestos-containing materials *(logbook)*

DEQ Response: See individual resolution for each bullet item above. In addition, DEQ will direct Tetra Tech to review and revise the Work Plan and newly prepared guidance for Appendix B (post-EPA discussions and comments) to clearly identify where (PDA, logbook, sketch, etc.) such inspection information and observations will either be recorded or have eliminated the need to gather such data. Following the review, Tetra Tech will ensure that the PDA is programmed to collect the necessary information and all subsequent data users (databases) are able to store the information.

e. Page 31: We recommend that provisions be developed to inform residents or building owners when damaged or friable suspect asbestos-containing materials are observed during the indoor inspection. Please specify who will be responsible for communicating with the residents/building owners and how the information will be provided and in what time frame.

DEQ Response: DEQ will direct Tetra Tech to revise Section 2.2 to read: "If Tetra Tech obtains soil or dust samples at a property, Tetra Tech will, if requested, provide the property owner with a receipt for the samples identifying the number and types of samples collected. Sample receipts and a copy of the inspection notes will be available to property owners the day after sample collection at the DEQ Troy Information Center. Tetra Tech field team members are encouraged to engage in conversation with the occupants during the inspection to relate the location of any observed VCI or other potential asbestos-containing materials, discuss potential methods to reduce occupant exposure to potential LA or other asbestos contamination, the availability of the Environmental Resource Specialist Program, and any other questions the occupant may have related to LA. An example sample receipt is in Appendix D. No sample results will be available during the TAPE inspection and sampling. An individual property owner who requests a portion of a sample must supply all necessary materials required for sampling, as well as arrange and pay for laboratory analysis of all additional samples collected."

f. Page 32: The rationale provided for selection of micro vacuum samples over wipe samples is described as to be consistent with data collection at Libby OU4. However, we would add that data collection procedures under the TAPE are also designed to improve upon data collection procedures at Libby OU4 wherever possible. As you know, EPA is concerned about the usefulness of dust samples in general. Please indicate that the selection of a composite dust sample of 30 sub-samples was chosen to improve upon representativeness. Please also add that micro vacuum dust samples can provide a more representative composite sample than a wipe sample can.

DEQ Response: DEQ will direct Tetra Tech to revise the text of the second paragraph of Section 4.4.2 to read: "The decision to use microvac sampling, rather than wipe sampling, for the TAPE inspection and sampling was based primarily on the need to collect data that are consistent with data collected for the Libby OU4, with improvements where possible. Microvac sampling methods are assumed to collect samples that more accurately measure releasable asbestos fibers and provide a more representative composite dust sample when compared with wipe samples. Each indoor dust sample will be composed of a 30-point composite sample, as described in the above-mentioned ASTM standard (ASTM 2003), as amended. A 30-point composite sample will improve representativeness of the dust sample for each level of the building."

g. As stated in comment 6.a above, a written procedure must be developed for indoor dust sampling. The written procedure must include a standard method for choosing the locations of the 30 sub-samples over each level of a building such as a systematic 30

point grid overlain over the building level. Include a method for identifying the locations of the sub-samples within the building. Also, include specific guidance on what horizontal surfaces should be targeted for the collection of a dust sub-sample (floors, windowsills, writing surfaces, etc., or an equal number of each?). As currently written, the TAPE allows each field team to choose the locations of the 30 sub-samples at its own discretion. We're concerned that this approach may provide sampling results that aren't directly comparable among properties and may not meet the data quality objectives.

DEQ Response: As noted in response to General Comment D above, DEQ will direct to prepare an Indoor Inspection and Dust Sample Collection guidance to be included in Appendix B, incorporating both comments below and our discussions. DEQ will direct Tetra Tech to provide EPA a draft version of the guidance no later than April 18, 2007 for EPA review and comment on April 19, 2007. DEQ will also direct Tetra Tech to limit the details in the main text of the Work Plan to summarize and reference the guidance in Appendix B.

h. Please modify the TAPE Work Plan to include collection of indoor dust samples at a limited number of properties using two methodologies: 1) a 30-second sampling time for each aliquot and a 15-minute total sampling time per composite sample; and 2) a 2-minute sampling time for each aliquot and a 1-hour total sampling time per composite sample, consistent with the ASTM method. The purpose of this sampling is to evaluate the effect of decreasing the sampling time from the prescribed time in the ASTM method, 2 minutes, to 30 seconds.

DEQ Response: DEQ will direct Tetra Tech to revise Section 4.4.2.2 to reference the Indoor Inspection and Dust Sample Collection guidance located in Appendix B. DEQ will also direct Tetra Tech to revise the text of Section 4.4.2.2 by adding another paragraph to read: "Based on limited results from the first week of sampling and with the direction of EPA, Tetra Tech may also collect 25 paired indoor dust samples using the same methodologies described in this Work Plan except the aliquots will be collected for two (2) minutes each for a total of one hour of sampling time. The purpose of this sampling is to evaluate the effect of decreasing the sampling time from the prescribed time in the ASTM method D5755-03 of 2 minutes to 30 seconds."

i. Please ensure the PDA is programmed to allow the field team to record the indoor dust sample point locations as indicated in this section of the TAPE work plan. Also, ensure the PDA is programmed to record the sampling time (pump start time and end time) and flow rate for each composite dust sample.

DEQ Response: DEQ will direct Tetra Tech to review and revise the Work Plan and newly prepared guidance for Appendix B (post-EPA discussions and comments) to clearly identify where (PDA, logbook, sketch, etc.) such inspection information and observations will either be recorded or have eliminated the need to gather such data. DEQ will also direct Tetra Tech to limit the details in the main text of the Work Plan to summarize and reference the guidance in Appendix B. Following the review, Tetra Tech will ensure that the PDA is programmed to collect the necessary information and all subsequent data users (databases) are able to store the information.

j. Page 34: In the second paragraph, please indicate how often the secondary standard rotometers will be calibrated.

DEQ Response: DEQ will direct Tetra Tech to revise the text of the last sentence of the first full paragraph on page 34 to read: "...Buck Calibrator the week of April 23, 2007 and the week of July 2, 2007. Results of the calibrations will be documented on calibration charts for each rotometer and managed by the Field Team Leader."

k. Page 35: The identification of the indoor dust sample point locations is left to the discretion of the field team. We disagree with this approach. Please modify the first sentence on this page to, "Indoor dust sample point locations will be described and recorded in the TAPE field logbook and in the PDA and may be photographed but will be identified on the property sketch."

DEQ Response: DEQ will direct Tetra Tech to revise Section 4.4.2.2 to reference the Indoor Inspection and Dust Sample Collection guidance located in Appendix B. DEQ will also direct Tetra Tech to limit the details in the main text of the Work Plan to summarize and reference the guidance in Appendix B. DEQ will also direct Tetra Tech to revise the last paragraph of Section 4.4.2.2 to read: "Indoor dust sample point locations will be determined and recorded as detailed in the Indoor Inspection and Dust Sample Collection guidance located in Appendix B."

l. Page 35: Please refer to the most recent versions of existing SOPs prepared by CDM for visible vermiculite developed to support PDIs and other investigative studies for important modifications. For example, former flowerbeds are now included in the common use area category.

DEQ Response: DEQ will direct Tetra Tech to revise the title and citation throughout the Work Plan for the Visible Vermiculite SOP to reflect the most recent Revision 1, with appropriate modifications (division and sampling of exterior use areas) based on our conversation of April 19, 2007.

m. Page 37: The description of the outdoor soil sampling procedure indicates that the sub-sample locations will be chosen to allow approximately equal sub-sample spacing and it includes Figure 3-2 that illustrates typical designs. Please include details about how the sub-sample locations will be marked in the field. Will the sampling teams use flags or some other means to ensure the lay-out of sub-samples is consistent with the typical designs and allows for approximately equal spacing?

DEQ Response: DEQ will direct Tetra Tech to revise Figure 3-2 and provide additional explanation in the text based on our conversation of April 19, 2007. DEQ will also direct Tetra Tech to include details of the procedures for identifying, measuring, and marking sub-sample locations in the Soil Sampling and Visual Estimation of Vermiculite guidance in Appendix B and summarize in the main text of the Work Plan as appropriate.

m. Please ensure the PDA is programmed to allow the field team to record the results of inspection of each sub-sample for visual observations of vermiculite as indicated in this section of the TAPE work plan.

DEQ Response: Done and revised to include four levels of visual presence.

n. Section 4.4.4.2, Page 38: The second paragraph uses the phrase "typical open space sample" which is inconsistent with the established terminology for the use areas (specific use area, common use area, limited use area, and non-use area). Please correct this. It's confusing as written. Use the established terminology for use areas.

DEQ Response: DEQ will direct Tetra Tech to revise the text of the third paragraph of Section 4.4.4.2 by replacing "open space area" with "common use and limited use areas."

o. The CDM Site-Specific SOP for Soil Sample Collection (CDM-Libby-05 Revision 1) requires the use of a sprayer with deionized water to wet each sample point prior to collection. The Troy Asbestos Property Evaluation Soil Sampling and Visual Estimation of Vermiculite Guidance, Version 01 doesn't include this. Please check and correct as appropriate.

DEQ Response: DEQ will direct Tetra Tech to revise the Work Plan, guidance in Appendix B, and equipment list to include wetting of the soil prior to sampling. The Health and Safety Plan already reflects this activity.

p. CDM-Libby-05 Revision 1 specifies that soil samples collected from "non-disturbed areas (i.e., yard)" will be collected from the 0 to 1 inch depth interval. The procedure for the TAPE requires soil samples from common use and limited use areas to be collected from the 0 to 3 inch depth interval. The rationale for the modification of the depth of soil samples must be included in the TAPE Work Plan. Ideally, it should be in the data quality objectives discussion. Similarly, CDM-Libby-05 Revision 1 specifies that soil samples collected from driveways will be collected from the 0 to 6 inch depth interval since driveways are designated a "disturbed areas". In the TAPE Work Plan, driveways are designated as common use areas and samples are collected from the 0 to 3 inch depth interval. Please provide the rationale for this difference between the two programs.

DEQ Response: Based on numerous discussions and subsequent correspondence between EPA and DEQ (last of which was our conversation on April 19, 2007), DEQ directed Tetra Tech to revise this Work Plan to provide a soil sampling protocol that is consistent with the Visible Vermiculite SOP Revision 1, as appropriate for the Troy TAPE project. Therefore, the sampling protocol for the TAPE is different than what was done in Libby. DEQ will direct Tetra Tech to revise the TAPE to be consistent with the Visible Vermiculite SOP Revision 1 and include additional language providing justification for the sample depths. Such justification can be found in the footnotes of the Visible Vermiculite SOP. DEQ requests that EPA include similar rationale in the revised Data Quality Objectives EPA is providing to DEQ.

q. Section 4.4.4.2, Page 39: The second paragraph on this page indicates that the amount of vermiculite in each sub-sample will be categorized as none, low, or high. Please

modify these categories to "none, low, intermediate, or high". Please make the same correction in the written guidance contained in Appendix B as well as in the PDAs.

DEQ Response: Done and revised to include four levels of visual presence.

r. The final TAPE Work Plan must include a summary table of all field samples (including those required by the Health and Safety Plan) that are planned for collection.

DEQ Response: DEQ will direct Tetra Tech to include two separate summary tables of all field samples planned for collection, including QA, in a single table and all Health and Safety samples planned for collection in a separate table. The tables should have the following columns:

Sample Media	*Estimated Number per week*	*Analysis*	*Turn Around*
Soil *Dust* *Air*	*Identified weekly for the entire project*	*TEM or PLM-VE*	*Will be either rapid for personnel and QA or routine project*

8. Section 5.0, Field Quality Control Procedures

a. Page 41: Please modify the first full sentence on this page to indicate that the air pump will require decontamination between samples. The exterior will be wiped clean with a damp paper towel to avoid transferring dust from one building level to another. Also indicate whether the tygon tubing that connects the cassette to the air pump will be decontaminated or disposed of between composite samples.

DEQ Response: DEQ will direct Tetra Tech to revise the first paragraph of Section 5.1 to read: "Dust samples will be collected using a new cassette and a clean template for each sample collected. Sample templates will be made of hard Plexiglas or other durable material that will be decontaminated after each sample is collected. The air pump and the tubing that connects the cassette to the air pump will be decontaminated between samples with a damp paper towel to avoid transferring dust from one location to another."

b. Page 42: The first paragraph on this page indicates that Tetra Tech will not use a cassette from a given lot until the dust lot blank results confirm the cartridges are asbestos-free. Please indicate who is responsible for ensuring this. How will the analytical results for the dust lot blanks be communicated to the field teams in time to ensure adjustments are made?

DEQ Response: DEQ will direct Tetra Tech to revise the first paragraph on page 42 to read: "Tetra Tech will not use a cassette from a given lot until the dust lot blank results confirm the cartridges are asbestos-free. The Tetra Tech TAPE QA/QC Manager will be responsible for the cassette clearance and usage. All cassette lots will be managed by the Tetra Tech TAPE QA/QC Manager inside the office area of the Field Office until clearance results have been confirmed. After the Tetra Tech TAPE QA/QC Manager receives acceptable results from a lot of

cassettes, the manager will write "ok to use" and the date on the outside of the box and then place the box in the equipment shed for the field teams to use."

c. Page 42: The third paragraph indicates that dust lot blank samples and field equipment blanks will be analyzed by the EMSL Laboratory located in Libby for analysis by method PLM-9002. This is incorrect. The QA samples will only be informative if they are prepared and analyzed using the same methods as required for field samples. Please make the required correction. Please indicate specifically how the results will be used and who is responsible for communicating the results to the field teams in time to ensure adjustments are made.

DEQ Response: DEQ will direct Tetra Tech to eliminate the third paragraph on page 42. The sample table created from a previous comment and clarification provided by the Sitewide QAPP will address the comment. DEQ will direct Tetra Tech to revise the third paragraph on page 42 to read: "During the course of the field work, at least two dust samples from each new sampling team or team member will be submitted to an appropriate laboratory for rapid analysis. These dust samples will help verify the sampling teams are utilizing appropriate collection methods. In addition, initially these samples will also help determine the efficacy and ability of the field team to collect a dust sample with 30 aliquots and 15 minutes of vacuum time."

d. Page 42 - In this case, lot blanks for soils are not useful. They look and behave nothing like soil, so they could be spotted immediately by analysts as QC samples and will not really [illegible] conditions in soil. Interpretation of results will be difficult. We recommend [illegible] using quartz lot blanks.

[illegible]

Comment [CDL1]: As of 5 pm on Thursday, April 19, 2007, Mark Stockwell was trying to get resolution between CDM and Mary Goldade. Apparently DEQ received different guidance than what CDM is doing in Libby.

e. Page 42: Please modify the second to last sentence in the fourth paragraph to, *"Data for dust field duplicates will be used to evaluate the potential variability in Libby amphibole concentrations on a single level of a building."*

DEQ Response: DEQ will direct Tetra Tech to revise the text per the comment.

f. Page 45, Section 5.7: This section should describe how both temporary and permanent modifications will be handled. Please include the provision that permanent modifications need the approval of the EPA Team Leader and that the EPA Team Leader is responsible for obtaining concurrence of the EPA Technical Assistance Unit before approval. Permanent modifications that may affect other field programs and/or may be of concern to data users should be communicated to others who may be affected.

DEQ Response: DEQ will direct Tetra Tech to revise the text and the modification form per our discussion of April 19, 2007 and this comment. EPA will please provide DEQ a current field modification form (both front and back) as a template.

g. This section should include a requirement that all field teams participate in a readiness review before sample collection activities begin.

DEQ Response: Per our discussion of April 17, 2007, the week of field training qualifies as a "readiness review." Tetra Tech will have sign in sheets, provide a scribe to document the training topics, discussions, and changes/resolutions and will modify the work plan appropriately after the training week. Tetra Tech will also have daily meetings with the field teams prior to sampling to review any recent changes, discuss potential issues, and review health and safety protocol. All field team members are required to attend the training week of April 23, 2007.

h. Please refer to the Sitewide QAPP to ensure that all required field QC procedures are incorporated into the TAPE Work Plan. It's acceptable to just provide a reference to specific sections of the Sitewide QAPP as necessary.

DEQ Response: DEQ will direct Tetra Tech to reference the Sitewide QAPP when possible and ensure that all required field QC procedures from the Sitewide QAPP are incorporated into the TAPE Work Plan. DEQ will ask EPA to provide a copy of the most recent version of the Sitewide QAPP for appropriate inclusion and reference.

9. Section 7.0, QA/QC Procedures

a. Section 7.2, Page 49: The text states that standard protocols do not exist for validation of dust samples for asbestos. This is incorrect.

DEQ Response: EPA will provide DEQ the SRC Data Verification SOP for reference in Section 7.2 and inclusion in Appendix B. DEQ will direct Tetra Tech to revise the text and reference the Data Verification SOP.

b. Please include a discussion of modification forms and ensure that forms are derived from those used in OU4.

DEQ Response: Section 5.3 includes text (to be modified based on a previous comment) and reference to the field modification form. The Tetra Tech field team members are not responsible for laboratory analytical methods, modifications, or quality control. Therefore, DEQ will rely on EPA to include such pertinent information in the Sitewide QAPP (to be referenced in the TAPE Work Plan) or the on-site prep lab SOP.

Appendix B

a. Please include a list of the specific equipment required for each procedure in the written guidance for each. The comprehensive Equipment/Supplies List provided in Appendix C is fine, but the specific equipment needs must be also included in the guidance.

DEQ Response: DEQ will direct Tetra Tech to include a list of the specific equipment requirements for each guidance, per this comment.

b. Please include the appropriate field forms required for each procedure in the written guidance for each. The inclusion of all field forms in Appendix E is fine, but the required forms must be also included in the guidance for each procedure.

DEQ Response: DEQ will direct Tetra Tech to prepare field forms (based on the PDA screens and data collection methods) for each guidance document and an entire set as Appendix E. The set provided in Appendix E will also be available to each field team in case the PDA is not functioning in the field. The field forms will mimic the PDA exactly to ensure standardization of data collection and assist with data entry if necessary. The field forms will be prepared after May 3, 2007 to allow for accommodation of modifications made during training week or the initial week of sampling. We anticipate the field forms to be modified as necessary to accommodate any changes to the work plan.

Appendix E

a. Please provide the interview form in Appendix E as indicated in Section 4.3 of the TAPE Work Plan.
   DEQ Response: Per a previous comment, the language in Section 4.3 has been modified and no longer references the interview form.

The following text is copied directly from an e-mail chain between Marty McComb (original list) and Bonnie Lavelle (RESPONSES IN CAPS), based on a meeting with Randy Dorian, Marty McComb, Bonnie Lavelle, Wendy O'Brien and Mary Goldade of April 2, 2007. *DEQ responses are in italic.*

A) The following changes have been made:
-soil subsamples will be categorized as none, low, intermediate, or high WE AGREE *The categories have been changed in the PDA and the Work Plan*
-location description has been simplified to specific, common, and limited use - WE AGREE, PLEASE MAKE SURE "NON-USE AREAS" ARE CAPTURED ALSO. *Non-use areas will be captured on the property sketches.*

B) Catherine was informed that the EPA will request that the PDAs record the following items (She wants to research the meaning of these items and will provide direction at a later time. However, we stand ready to add them):
-the locations of indoor dust sub-sample locations *(this information will be captured on the building sketch, the PDA will record what level of the building the sample came from)*
-the length, width, height of observed VCI *(this information will no longer be collected)*
-barriers between the attic area and access points *(delete this data collection from the work plan)*
-damaged or friable asbestos-containing materials *(this information will be captured in the logbook)*
WE ARE NOT REQUESTING THAT THE ABOVE ITEMS BE ADDED - RATHER, WE NOTED IN OUR REVIEW OF THE TAPE WORK PLAN THAT THE WORK PLAN SPECIFICALLY SAYS THESE ITEMS ARE TO BE RECORDED IN THE PDAS BY THE FIELD TEAMS. (ALSO, THERE WERE MORE THAN JUST THE FOUR ITEMS YOU IDENTIFIED ABOVE.) THE PDA SHEETS WE SAW AT OUR MEETING WITH MARTY AND RANDY DORIAN DID NOT HAVE THIS

INFORMATION. THE DECISION ABOUT WHETHER TO INCLUDE THE ABOVE OR NOT IS CATHERINE'S - WE JUST WANT TO MAKE SURE THAT IF THE WORK PLAN CALLS FOR SOMETHING TO BE RECORDED IN THE PDA - THE PDAS ARE PROGRAMMED ACCORDINGLY. SOMETHING NEEDS TO BE DONE TO CORRECT THIS - EITHER THE PDAS NEED TO BE PROGRAMMED OR THE WORK PLAN NEEDS TO BE MODIFIED. *DEQ will direct Tetra Tech to review and revise the Work Plan and newly prepared guidance for Appendix B (post-EPA discussions and comments) to clearly identify where (PDA, logbook, sketch, etc.) such inspection information and observations will either be recorded or have eliminated the need to gather such data. Following the review, Tetra Tech will ensure that the PDA is programmed to collect the necessary information and all subsequent data users (databases) are able to store the information.*

C) Last Monday, the TAU said the following items should be added to the PDAs. However, they are not mentionned in the draft TAPE comments and so they are not being added at this time:
-mode of entry to the attic - NOT NEEDED *(no action necessary by DEQ.)*
-whether or not a wood burning stove is in use -PLEASE ADD *(This information will be collected on the PDA as any wood burning activity – fireplace, stove, etc)*
-# rooms per floor- NOT NEEDED *(no action necessary by DEQ.)*
-multiple remodelling dates- NOT NEEDED *(no action necessary by DEQ.)*
-indication whether responses are from the owner or the field crew INDICATE IN PARENTHESES WHETHER THE RESPONSE SHOULD BE PROVIDED BY OWNER OR IS RESPONSIBILITY OF FIELD TEAM TO VERIFY *(This information will be included in the training session and on the hard-copy field forms in Appendix E. However, to add the text to the PDAs now would require extensive time and resources.)*
-whether or not the construction date is estimated- NOT NEEDED*(No action necessary by DEQ.)*
-start and stop pump times for all dust subsamples- JUST NEED PUMP START AND PUMP STOP TIMES FOR THE COMPOSITE SAMPLE - NOT THE 30 SUB-SAMPLES *(DEQ will collect the total "vacuum" time for each sample on the PDA. With the pumps being shut off between aliquot collections, DEQ does not understand the value to an overall start and stop time.)*
-expand location of visible vermiculite to allow for different areas- PLEASE ADD *(see next comment)*
-expand "if indoor vermiculite exists, which floor is it on" to allow for multiple floors - PLEASE ADD *(This "location" entry field will be moved to the dust sample form on the PDA to allow for direct correlation between the level of the dust sample and "which floor is it on" and the drop-down list will include "wall, ceiling, floor [and all combinations of these], none, and other.)*

D) Last Monday, the TAU said that the following items should be deleted from the PDAs. However, they are not mentionned in the draft TAPE comments and so they are not being deleted at this time:

-Where are primary source materials located? - WE AGREE THE LOCATIONS OF THE PRIMARY SOURCE MATERIALS ARE NEEDED *(No action necessary by DEQ.)*
-Surrounding land use? - WE DON'T SEE THE NEED FOR THIS BUT IF CATHERINE WANTS IT, OK WITH US *(this information will no longer be collected)*

WE DID NOT SUGGEST DELETING THE FOLLOWING QUESTIONS. WE JUST NOTED THAT THIS INFORMATION ISN'T NEEDED TO SUPPORT RISK ASSESSMENT AND RESPONSE ACTION DECISIONS. I UNDERSTAND PAUL WANTS THESE INCLUDED AND THEY'RE IMPORTANT FOR OTHER REASONS. PLEASE KEEP THEM. *(No action necessary by DEQ.)*
-Was vermiculite from the mine used in and around your home?
-Was this vermiculite purchased from a store?
-Where else did you acquire vermiculite?
-Has the resident purchased any vermiculite materials from WR Grace?
-Has this property been used as for profit enterprise to distribute, store of dispose of vermiculite?
-Are there vermiculite materials in any of the building materials?
-Are you aware of any asbestos containing products other than Libby vermiculite in your home?
-Was the building remodelled? If yes, when? Where did the remodelling take place?

E) Other questions the TAU brought up:
-Is an indoor sketch required? THIS WAS NOT A QUESTION - AN INDOOR SKETCH IS REQUIRED *(DEQ will direct Tetra Tech to incorporate a sketch in the dust sampling guidance.)*
-Does the square footage include the basement? - THE COMMENT WAS TO MAKE SURE THE SQUARE FOOTAGE OF THE BASEMENT IS INCLUDED IN THE TOTAL SQUARE FOOTAGE OF THE BUILDING IF THE BASEMENT IS A FINISHED LIVING SPACE *(DEQ and Tetra Tech will direct the field teams to include all living space in the total square footage [finished basements, attics, etc.])*